

WHAT IS CLAIMED IS:

1. A relay apparatus comprising:

a first connection unit configured to connect with
a first network;

5 a second connection unit configured to connect
with a second network different from the first network;

an ID acquisition unit configured to acquire a
unique ID of a partner device connected to the second
network through the second connection unit;

10 an ID comparison unit configured to compare a
unique ID of its own with the unique ID of the partner
device; and

a control unit which control to set the unique ID
again to make the IDs inconsistent, when it is found as
15 a result of comparison by the comparison unit that the
unique ID of its own coincides with the unique ID of
the partner device.

2. An apparatus according to claim 1, further
comprising an ID notification unit configured to notify
20 the partner device connected to the second network
through the second connection unit of the unique ID of
its own.

3. An apparatus according to claim 2, further
comprising:

25 an identification information collection unit
configured to collect first identification information
from a partner device connected to the first network

through the first connection unit;

an identification information notification unit
configured to notify the partner device connected to
the second network through the second connection unit
5 of the first identification information;

an identification information acquisition unit
configured to acquire second identification information
from the partner device connected to the second network
through the second connection unit; and

10 a reply unit configured to return the second
identification information in response to an inquiry
about identification information from the partner
device connected to the first network through the first
connection unit.

15 4. An apparatus according to claim 2, further
comprising:

a device count detection unit configured to detect
the number of partner devices on the first network; and

a connection limit notification unit configured to
20 notify a user of information related to a connection
limit to the partner device on the basis of a detection
result of the number of partner devices by the device
count detection unit.

25 5. An apparatus according to claim 3, further
comprising:

a device count detection unit configured to detect
the number of partner devices on the first network; and

a connection limit notification unit configured to notify a user of information related to a connection limit to the partner device on the basis of a detection result of the number of partner devices by the device
5 count detection unit.

6. An apparatus according to claim 2, wherein when the unique ID of its own coincides with the unique ID of the partner device, the control unit controls to set again only one of the unique ID of its own and the
10 unique ID of the partner device.

7. An apparatus according to claim 2, further comprising:

a connection state change detection unit configured to detect a change in connection state on
15 the first network; and

a connection state change notification unit configured to notify the partner device connected to the second network of the change in connection state detected by the connection state change detection unit.

20 8. A relay apparatus comprising:

a first connection unit configured to connect with a first network;

a second connection unit configured to connect with a second network different from the first network;

25 an ID storage unit configured to store in advance a unique ID of the partner device;

an ID acquisition unit configured to acquire a

unique ID of a partner device connected to the second network through the second connection unit;

an ID comparison unit configured to compare the stored unique ID with the acquired unique ID to perform
5 determination; and

a control unit which executes connection to the partner device connected to the second network through the second connection unit, when coincidence between the unique IDs is confirmed by the ID comparison unit.

10 9. A network relay method of relaying a first network and a second network different from the first network, comprising:

acquiring a unique ID of a partner device connected to the second network;

15 comparing a unique ID of its own with the unique ID of the partner device; and

setting the unique ID again to make the IDs inconsistent, when it is found as a result of comparison by the comparison unit that the unique ID of
20 its own coincides with the unique ID of the partner device.

10. A method according to claim 9, further comprising notifying the partner device connected to the second network through the second connection unit
25 of the unique ID of its own.

11. A method according to claim 10, further comprising:

collecting first identification information from a partner device connected to the first network;

notifying the partner device connected to the second network of the first identification information;

5 acquiring second identification information from the partner device connected to the second network; and

returning the second identification information in response to an inquiry about identification information from the partner device connected to the first network.

10 12. A method according to claim 10, further comprising:

detecting the number of partner devices on the first network; and

15 notifying a user of information related to a connection limit to the partner device on the basis of a detection result of the number of partner devices.

13. A method according to claim 11, further comprising:

20 detecting the number of partner devices on the first network; and

notifying a user of information related to a connection limit to the partner device on the basis of a detection result of the number of partner devices.

25 14. A method according to claim 10, wherein when the unique ID of its own coincides with the unique ID of the partner device, only one of the unique ID of its own and the unique ID of the partner device is set

again.

15. A method according to claim 10, further comprising:

5 detecting a change in connection state on the first network; and

notifying the partner device connected to the second network of the detected change in connection state.

16. A network relay method of relaying a first network and a second network different from the first network, comprising:

storing in advance a unique ID of the partner device;

15 acquiring a unique ID of a partner device connected to the second network through the second connection unit;

comparing the stored unique ID with the acquired unique ID; and

20 connecting the partner device connected to the second network through the second connection unit, when coincidence between the unique IDs is confirmed by the ID comparison unit.